CLAIMS:

1. A thermal spraying powder comprising:

no less than 30% by weight and no more than 70% by weight of molybdenum;

no less than 5% by weight and no more than 12% by weight of boron;

no less than 10% by weight and no more than 40% by weight of cobalt; and

no less than 15% by weight and no more than 25% by weight of chromium, wherein,

the total content of molybdenum, boron, cobalt, and chromium in the thermal spraying powder is no less than 95% by weight; and,

the primary crystal phase of the thermal spraying powder is multi-element ceramics containing at least one of cobalt and chromium along with molybdenum and boron.

2. The thermal spraying powder according to claim 1, wherein in an X-ray diffraction pattern of the thermal spraying powder, there is a plurality of peaks originating from the multi-element ceramics with one of the peaks having a maximum intensity that is no less than twice that of other peaks originating in chemical species other than the multi-element ceramics.

3. The thermal spraying powder according to claim 1, wherein the content of molybdenum in the thermal spraying powder is no less than 40% by weight and no more than 50% by weight.

4. The thermal spraying powder according to claim 1, wherein the content of boron in the thermal spraying powder is no less than 6% by weight and no more than 10% by weight.

5. The thermal spraying powder according to claim 1, wherein

the content of cobalt in the thermal spraying powder is no less than 20% by weight and no more than 35% by weight.

6. The thermal spraying powder according to claim 1, wherein the content of chromium in the thermal spraying powder is no less than 17% by weight and no more than 20% by weight.

7. The thermal spraying powder according to claim 1, wherein the thermal spraying powder is composed of particles, and the particles have mechanical strength of no less than 50 MPa and no more than 600 MPa.

8. The thermal spraying powder according to claim 7, wherein the particles have mechanical strength of no less than 150 MPa and no more than 400 MPa.

9. The thermal spraying powder according to claim 1, wherein the thermal spraying powder is used in applications for forming a thermal sprayed coating by high-velocity flame spraying.

10. A method of forming a thermal sprayed coating comprising:
preparing a thermal spraying powder containing:
no less than 30% by weight and no more than 70% by weight of molybdenum,
no less than 5% by weight and no more than 12% by weight of boron,
no less than 10% by weight and no more than 40% by weight of cobalt, and
no less than 15% by weight and no more than 25% by weight of chromium, wherein,
the total content of molybdenum, boron, cobalt, and chromium in the thermal spraying powder is no less than 95% by weight, and,
the primary crystal phase of the thermal spraying

powder is multi-element ceramics containing at least one of cobalt and chromium along with molybdenum and boron;

thermally spraying the thermal spraying powder onto a substrate to form a thermal sprayed coating on the surface of the substrate;

coating a sealing treatment agent onto the thermal sprayed coating formed on the surface of the substrate, the sealing treatment agent containing boron nitride and an organic silicon polymer in which the carbosilane bonds and siloxane bonds remain when ceramic conversion has been carried out; and

carrying out ceramic conversion on the sealing treatment agent by thermal decomposition of the sealing treatment agent coated onto the thermal sprayed coating.

11. A thermal spraying powder comprising:

no less than 30% by weight and no more than 70% by weight of molybdenum;

no less than 5% by weight and no more than 12% by weight of boron;

no less than 15% by weight and no more than 45% by weight of nickel; and

no less than 12% by weight and no more than 25% by weight of chromium; wherein,

the total content of molybdenum, boron, nickel, and chromium in the thermal spraying powder is no less than 95% by weight; and,

the primary crystal phase of the thermal spraying powder is multi-element ceramics containing at least one of nickel and chromium along with molybdenum and boron.

12. The thermal spraying powder according to claim 11, wherein in an X-ray diffraction pattern of the thermal spraying powder, there is a plurality of peaks originating from the multi-element ceramics with one of the peaks having a

maximum intensity that is no less than twice that of other peaks originating in chemical species other than the multi-element ceramics.

13. The thermal spraying powder according to claim 11, wherein the content of the molybdenum in the thermal spraying powder is no less than 40% by weight and no more than 50% by weight.

14. The thermal spraying powder according to claim 11, wherein the content of the boron in the thermal spraying powder is no less than 6% by weight and no more than 10% by weight.

15. The thermal spraying powder according to claim 11, wherein the content of the nickel in the thermal spraying powder is no less than 25% by weight and no more than 35% by weight.

16. The thermal spraying powder according to claim 11, wherein the content of the chromium in the thermal spraying powder is no less than 14% by weight and no more than 18% by weight.

17. The thermal spraying powder according to claim 11, wherein the thermal spraying powder is composed of particles, and the particles have mechanical strength of no less than 50 MPa and no more than 600 MPa.

18. The thermal spraying powder according to claim 17, wherein the particles have mechanical strength of no less than 150 MPa and no more than 400 MPa.

19. The thermal spraying powder according to claim 11, wherein the thermal spraying powder is used in applications

for forming a thermal sprayed coating by high-velocity flame spraying.

20. A method of forming a thermal sprayed coating comprising:

preparing a thermal spraying powder containing:

no less than 30% by weight and no more than 70% by weight of molybdenum,

no less than 5% by weight and no more than 12% by weight of boron,

no less than 15% by weight and no more than 45% by weight of nickel, and

no less than 12% by weight and no more than 25% by weight of chromium, wherein,

the total content of molybdenum, boron, nickel, and chromium in the thermal spraying powder is no less than 95% by weight, and,

the primary crystal phase of the thermal spraying powder is multi-element ceramics containing at least one of nickel and chromium along with molybdenum and boron;

thermally spraying the thermal spraying powder onto a substrate to form a thermal sprayed coating on the surface of the substrate;

coating a sealing treatment agent onto the thermal sprayed coating formed on the surface of the substrate, the sealing treatment agent containing boron nitride and an organic silicon polymer in which the carbosilane bonds and siloxane bonds remain when ceramic conversion has been carried out; and

carrying out ceramic conversion on the sealing treatment agent by thermal decomposition of the sealing treatment agent coated onto the thermal sprayed coating.